Deseret Chemical Depot
Attachment 10
Preparedness and Prevention Plan

Preparedness and Prevention Plan

1.0 Sitewide Preparedness and Prevention Procedures

1.1 Overview

1.1.1 Regulatory Requirements

1.1.2 The information in this attachment describes procedures to prevent hazards in Deseret Chemical Depot (DCD) permitted hazardous waste storage areas. The minimum security procedures required at DCD by Army Regulation (AR) 50-G-1 "Nuclear and Chemical Weapons and Material," Chemical Surety Program, Resource Conservation and Recovery Act (RCRA) and Utah Solid and Hazardous Waste Act (USHWA) are also described. The information provided in this attachment is submitted in accordance with the requirements of R315-3-2.5(b)(4), (5), (8), and (9), and R315-3-2.6(c) and (d). These regulations are the state equivalents to Code of Federal Regulations (CFR) 40 CFR § 270.14(b)(4), (5), (8), and (9); 270.15 (c) and (d). Other requirements addressed to complete this attachment are described in Utah Hazardous Waste Rules R315-8-2.5, R315-8-2.6, R315-8-2.8, R315-8-3.3, R315-8-3.4, R315-8-3.5, R315-8-3.6, R315-8-9.5, R315-8-9.7, R315-8-9.8; R315-8-22; 40 CFR § 264.602, 264.1088; DCD Standing Operating Procedures (SOPs); and other plans such as the Hazardous Waste Management Plan (HWMP) and Spill Prevention Control and Countermeasure Plan (SPCCP). The SOPs and plans contain information on the program or facility-specific procedures to prevent hazards. The procedures relative to RCRA considerations are summarized below. The procedures related to Chemical Munitions Accident/Incidents are listed in detail in the Chemical Accident/Incident Response and Assistance (CAIRA) Plan.

2.0 Waiver or Documentation of Preparedness and Prevention Requirements [R315-3-2.5(b)(6), R315-8-3.3, R315-8-3.6]

2.1 The Army is requesting no waivers for the preparedness and prevention requirements of R315-3-2.5(b), R315-8-3.3, or R315-8-3.6. DCD hazardous waste management units are designed, constructed, maintained, and operated to minimize the possibility of a fire, explosion, or any unplanned discharge of hazardous waste or hazardous waste constituents that could threaten human health or the environment.

3.0 Inspection Schedule [R315-3-2.5(b)(5), R315-8-2.6(b), R315-8-5.3; 40 CFR § 264.73(b)(5)]

3.1 The permitted storage structures, equipment, and containers within DCD hazardous waste management units are inspected regularly and frequently according to a schedule designed to detect deterioration, tampering, malfunctions, and discharges that could cause a release of hazardous waste to the environment or pose a threat to human health. Most inspections are performed on a weekly basis unless operations or other circumstances indicate a different frequency of inspection. Inspection plans and schedules for DCD storage areas can be found in Attachment 2 (Inspection Plan). Storage Area Inspection Log Sheets outline all areas that are inspected and provide sample inspection records. Samples of inspection log sheets can be found in Attachment 2 (Inspection Plan). Interior inspections of the permitted storage structures are conducted on a weekly basis. Inspection records are maintained by the Director of Risk Management (D/RM) for a period of at least three years.

4.0 Waste Pile Inspection [R315-3-2.9(d), R315-8-12.3(b]

4.1 The waste pile in Building 4107 is inspected weekly and after storms for evidence of deterioration of the enclosure building or failed run-on protection. Inspection for run-off is not required because the waste pile does not contain wastes with free liquid.

5.0 Surface Impoundment Inspection [R315-8-11.3(b), R315-3-2.8(c)] - Not Applicable

6.0 Incinerator Inspection [R315-8-15.7(b)] - Not Applicable

7.0 Landfill Inspection [R315-3-2.12(c), R315-8-14.3(b)] - Not Applicable

8.0 Land Treatment Facilities [R315-3-2.11(c)(5), R315-8-13.4(g)] - Not Applicable

9.0 Tank System Inspections [R315-8-10, 40 CFR § 264.195] - Not Applicable

10.0 Miscellaneous Unit Inspection [R315-3-2.14(a)(2), R315-8-16; 40 CFR § 264.602, 264.1088]

11.0 Boilers and Industrial Furnaces Inspection [R315-8-2.6, 40 CFR § 266.102] - Not Applicable

12.0 Containment Building Inspection [40 CFR § 264.1101(c)(4)] - Not Applicable

13.0 Equipment Requirements [R315-8-3.3, R315-8-3.4, R315-8-3.5]

13.1 The following sections address the equipment required by R315-8-3.3 through R315-8-3.5.

13.2 Internal Communications [R315-8-3.3(a), R315-8-3.4, R315-8-3.5]

13.2.1 In all DCD hazardous waste management units, internal communications and alarm signals are achieved primarily by voice, since all units are small enough for voice communication to be effective. Two-way radios are also available for communications between DCD security and personnel working at Area 10 waste storage igloos. At units outside of Area 10, sounding a vehicle horn may also be used as an alarm signal.

13.3 External Communications [R315-8-3.3(b), R315-8-3.4, R315-8-3.5]

13.3.1 All personnel entering and working within Area 10 waste storage igloos are required to be in direct visual and voice contact with each other and an employee outside the igloo, who must carry a two-way radio capable of summoning external assistance in an emergency. Each igloo is outfitted with connections for transmitting emergency communications between security personnel at the igloo and security personnel elsewhere at DCD. Employee teams working at the Open Burning/Open Detonation (OB/OD) Conex must be equipped with a handheld or vehicle-mounted two-way radio capable of summoning external assistance. All personnel working in non-agent hazardous waste management units, whether alone or with others, must have immediate access to a cellular phone or two-way radio capable of summoning external assistance. Facility communications equipment is tested weekly to ensure proper function.

13.4 Emergency Equipment [R315-8-3.3(c), R315-8-3.4]

13.4.1 An extensive inventory of emergency equipment is maintained at DCD to respond to emergency situations. The Fire Department is equipped with two fire trucks and equipment for extinguishing

fires and responding to chemical agent or other hazardous material spills. Fire extinguishers are located at all permitted hazardous waste storage sites, with the exception of the igloos in Area 10.

13.4.2 The Deseret Chemical Depot maintains supplies of personal protective equipment (PPE) and decontamination solution, and is equipped with an aide truck. Fire control, spill control, portable eyewash, and decontamination equipment is kept on an aide truck and brought to the igloo where activities are being performed. When work is being performed at the OB/OD Conex, fire control equipment is staged onsite in a vehicle. A spill kit is also permanently maintained at the OB/OD Conex, 4536, 4107 and 4553 (when in use).

13.4.3 Emergency equipment at all DCD hazardous waste management units is inspected weekly, and is ready for immediate deployment in the event of an incident or accident. A list of available equipment for spill cleanup is listed in Attachment 4 (Hazardous Waste Contingency Plan).

13.5 Water for Fire Control [R315-8-3.3(d)]

13.5.1 If a fire occurs in an igloo containing agent or explosives, it will generally be allowed to burn because of the dangers of fighting fires involving those materials. Additionally, the earth-covered, reinforced concrete igloos are structurally designed to contain fires involving explosives and munitions. Only small fires outside igloos are fought, and they are fought with small handheld fire extinguishers or by the fire department equipment, as appropriate. Fire hydrants are located approximately 500 to 4,000 feet from the igloos.

13.5.2 The DCD Fire Department maintains a 750-gallon per minute (gpm) pumper truck and a brush truck with a 200-gallon tank and a 60-gpm pump to fight fires not involving chemical agents or munitions. A fire hydrant is located approximately 400 feet from Building 4536. A fire hydrant is located about 4,800 feet from the OB/OD Conex. Small fires will be fought with fire extinguishers carried on all vehicles.

13.6 Aisle Space Requirements [R315-8-3.6]

13.6.1 Proper aisle space is maintained in all DCD hazardous waste storage areas to allow unobstructed movement of personnel, materials handling equipment (MHE), and spill control and decontamination equipment.

13.6.2 A minimum aisle space of 2.5 feet is maintained in the storage igloos and in Buildings 1825, 1835, 4536, 4107. Sufficient aisle space is maintained at the OB/OD Conex to allow for inspections and use of fire and spill control equipment.

13.7 Management of Ignitable or Reactive Wastes in Containers [R315-3-2.6(c), R315-8-9.7]

13.7.1 Containers holding ignitable or reactive waste are stored in permitted storage areas. Setbacks of ignitable or reactive waste in these areas more than exceed the requirement for containers to be more than 50 feet from the property line of the installation (Figure 6-1).

13.8 Management of Incompatible Waste in Containers [R315-3-2.6(d), R315-8-9.8]

13.8.1 Incompatible wastes and materials are not placed in the same container or stored near other containers of incompatible wastes. Storage compatibility criteria, as described in 49 CFR Part 177 Subpart C Department of Transportaion (DOT) Hazard Class (Division), are used when segregating wastes. No incompatible wastes will be stored on the same pallet in permitted DCD

hazardous waste storage units. Drums that have previously held hazardous waste are not re-used to store wastes or materials that are incompatible with that previously held.

13.9 Management of Ignitable or Reactive Wastes in Tank Systems [R315-8-10; 40 CFR § 270.16(j), 264.198(a)(2)] - Not Applicable

13.10 Management of Incompatible Wastes in Tank Systems [R315-8-10; 40 CFR § 270.16(j), 264.199] - Not Applicable

13.11 Management of Ignitable, Reactive, or Incompatible Waste Placed in Waste Piles [R315-3-2.9(f) and (g)]

13.11.1 The permitted waste pile in Building 4107 stores discarded doors from chemical storage igloos and other non-organic, non-reactive, non-ignitable wastes without free liquids. The doors are fabricated of steel and cement and are not reactive or ignitable.

14.0 <u>Area 10, Container Storage</u> [R315-8-9.1 through 9.10; 40 CFR § 264.1201(a)(2)

14.1 General Information

14.1.1 DCD stores three types of chemical agents in containers in Area 10 permitted storage igloos, including chemical munitions that the Army has declared obsolete or has categorized as waste, such as M55 rockets; overpacked, leaking chemical munitions; ton containers containing VX drained from M55 rockets; ton containers containing hydrolyzed VX; and secondary wastes derived from chemical munitions operations.

15.0 <u>Emergency Equipment</u> [R315-8-3.3(c), R315-8-3.4]

15.1 Emergency equipment available for use in Area 10 is listed in Table 4-3, "Area 10 Emergency Equipment and Supplies." Area 10 Emergency Equipment consists of decontamination trucks, aid trucks, communication systems, personnel safety equipment, and hand decontamination tools. Equipment stored in other areas is also available for use in emergencies.

16.0 <u>Operating Requirements</u>

16.1 Hazardous waste storage requires many different management practices to ensure safe operations and protection of the environment. Local SOPs describe procedures for packaging agent-related waste, and the DCD HWMP describes procedures for non-agent-related hazardous wastes, labeling containers, and performing waste inventories. Other management practices related to waste chemical munition storage and handling are provided in the current Department of Defense Explosives Safety Board (DDESB) storage standards. Containerized hazardous wastes are managed according to R315-8-9.

16.2 The DCD property line is well over the required minimum 50-foot distance from the nearest permitted storage building or igloo, so ignitable or reactive waste may be stored in these facilities in compliance with R315-8-9.7.

16.3 An operating record will be maintained for the life of the facility that specifies the location of each waste container and correlates waste analysis results to waste containers, as required in R315-8-5.3 40 CFR § 264.73. The contents of leaking or damaged containers will be repackaged

in RCRA-compliant containers. Headspace will be left in all containers storing volatile liquid to avoid damage caused by expansion or contraction of wastes because of temperature changes.

16.4 Waste Chemical Munitions and Ton Containers

16.4.1 Container management activities in permitted storage igloos include air monitoring for leak detection, visual inspections, labeling and inventorying containers in use, and overpacking leaking containers.

16.4.2 No igloo storing chemical munitions will exceed the design and DDESB-designated quantities (net explosive weight) for munitions stored in igloo. Munitions will be stored in accordance with approved storage drawings for orientation of items and in accordance with RCRA permit conditions.

16.4.3 A MHE aisle is maintained along the centerline within the storage igloos to facilitate inspections and movement of personnel around stacks. The MHE aisle allows movement of fire protection and decontamination equipment in case of emergencies. A 2.5-foot aisle space is maintained between palletized waste munitions and ton containers and between rows of pallets in the permitted storage igloos. Different munition lots stored in the same igloo are separated by rows or other spacing and/or are identified by tags or signs. The igloos are closed and access is limited to authorized personnel. Storage management practices require that all containers are stored on pallets and that containers are not stacked.

16.4.4 A hazardous waste label is placed on each container or pallet with the following information:

16.4.4.1 Waste Stream Number,
16.4.4.2 Nomenclature,
16.4.4.3 Date of accumulation, and
16.4.4.4 Facility Information.

16.4.5 Currently, DCD performs all air monitoring and inspection according to DCD SOPs. Monitoring activities are optimized for agent detection. The igloos used to store overpacked chemical munitions, and waste ton containers will be monitored through the headwall on a weekly basis using agent detection equipment. Visual inspections are also employed to detect liquid agent spills because the low vapor pressure of agent can limit detection in the vapor phase. Visual inspection of all waste chemical munition containers and ton containers is performed semiannually. New munition overpacks are inspected upon receipt, and again immediately before use.

17.0 Preventive Procedures, Structures, and Equipment [R315-3-2.5(b)(8)]

17.1 Loading and Unloading [R315-3-2.5(b)(8)(i)]

17.1.1 Hazards associated with handling, loading, and unloading operations are minimized through the implementation of DCD SOPs. Hazards are also minimized by personnel receiving the proper training as required by Army regulations. Hazardous waste containers are inspected prior to movement to make sure they are properly closed and tightly sealed. Containers are transported on pallets and loaded and unloaded with a forklift. One or more spotters are used when hazardous waste is moved at any DCD hazardous waste management unit. Ramps facilitate movement of MHE in and out of storage units.

17.2 Runoff [R315-3-2.5(b)(8)(ii)]

17.2.1 Permitted storage igloo structures are totally enclosed, weather-tight, and above exterior grade.

17.3 Protection of Water Supplies [R315-3-2.5(b)(8)(iii)]

17.3.1 Contamination of water supplies is prevented at DCD by minimizing the risk of discharge of hazardous waste. This is accomplished by proper inspection and maintenance of hazardous waste containers, including mitigation of leaking chemical munitions, prompt cleanup of any spills, and proper construction and maintenance of storage structures. Personnel are properly trained and equipped to handle hazardous wastes in both normal and emergency situations.

17.4 Mitigation of Equipment and Power Failures [R315-3-2.5(b)(8)(iv)]

17.4.1 Area 10 permitted storage igloos do not require power for normal operations. Portable generators are used for special operations requiring power. If the generators or any other special equipment fails during operations, activity will be suspended until the equipment is repaired or replaced.

17.5 Personal Protective Equipment [R315-3-2.5(b)(8)(v)]

17.5.1 Various levels of PPE are worn to protect workers from chemical exposure at DCD. Department of the Army Pamphlet (DA PAM) 385-6, Toxic Chemical Agent Safety Standards, and AR 385-61, The Army Chemical Agent Safety Program, all specify the proper level of PPE to be worn during different operations. Requirements in the listed references have also been incorporated into local SOPs. Stocks of PPE appropriate for all hazardous materials managed at DCD are maintained onsite per the specifications of the aforementioned Army regulations and procedures. Note that these levels maybe different from the Occupational Safety and Health Administration (OSHA) and the National Institute for Occupational Safety and Health (NIOSH) levels specified in 29 CFR § 1910.120(g)(5). The PPE requirements of DA PAM 385-61 may be modified if a particular operation requires a level of protection other than the one specified.

17.5.2 The potential for exposure of personnel to any hazardous materials during operations is minimized through monitoring and decontamination of PPE and other equipment before, during, and after use in an area known to be contaminated or potentially contaminated. DCDSOPs or health and safety plans are used to prepare PPE for either reuse or storage for eventual disposal.

17.6 Prevention of Reaction of Ignitable, Reactive, or Incompatible Waste [R315-3-2.5(b)(9), R315-8-2.8]

17.6.1 All wastes stored at DCD that are listed as ignitable or reactive are protected from sources of ignition or reaction (e.g. open flames, smoking, welding, radiant heat, or heat from friction, sparks, spontaneous ignition, etc.). Fusible links will close igloo ventilation dampers in the event of high temperatures, thereby minimizing the danger from fire. As described in Attachment 1 (Waste Analysis Plan), ignitable or reactive wastes at DCD include spent high efficiency particulate air filters, paint residues, and degreasing solvents. All hazardous wastes, not just the ignitable or reactive wastes, are protected from ignition sources. Some of the waste is potentially reactive, but the storage structures and procedures prevent reactions between the wastes.

17.6.2 To prevent accidental ignition or reaction caused by a lightning strike, the permitted storage igloos are protected with a lightning protection system. The air terminal (lightning rod) on the

rear vent stack is placed at least one foot higher than the top of the vent. Grounding rods are also attached to the igloos.

17.6.3 Smoking and spark-producing devices are not allowed in units storing agent-related waste. Automatic lighters are installed in permitted smoking areas. No smoking sign is posted at the entrance of Area 10.. The Fire Department must issue hot work permits for all operations that involve spark- or flame-producing operations.

17.6.4 A list of ignitable (D001) and reactive (D003) wastes stored in permitted storage areas is provided in Appendix 1-1, Table 1-1-1, RCRA Hazardous Waste Designation and Rationale. Precautions are taken with regard to storage to ensure that ignitable and reactive wastes are not exposed to ignition sources or other conditions that could initiate a reaction. Containers storing incompatible wastes at DCD are segregated, and incompatible wastes are not mixed. No Smoking signs are posted at the entrance to area 10 and all other permitted hazardous waste units. Workers are trained annually in proper handling and storage of hazardous waste. Training for DCD workers provides instruction for proper handling and protection from sources that could ignite or cause a reaction with munitions. The training for workers also provides instruction on the proper handling of munitions and related waste. General safety requirements in local SOPs, reviewed with chemical workers, provide instructions for properly handling munitions.

18.0 Inspection and Maintenance [R315-3-2.5(b)(5), R315-8-2.6(b), R315-8-5.3; 40 CFR § 264.73(b)(5)]

18.1 Frequency of facility inspections at DCD are based on the rate of deterioration of the equipment and the probability of an environmental or human health incident if the deterioration, malfunction, or any operator error goes undetected between inspections.

18.2 All permitted DCD hazardous waste management units are inspected weekly, except munition/waste munition that are monitored weekly and inspected twice a year. Containers are inspected weekly to meet the hazardous waste loading/unloading areas inspection requirements of R315-8-9.5. Spill equipment and other contingency equipment are inspected weekly. Hazardous waste loading and unloading areas are inspected daily when in use. Refer to Attachment 2 for facility inspection schedules. Igloo exteriors are inspected weekly for integrity of security features, proper secondary containment, building integrity, and absence of spills. The interiors of all igloos storing waste munitions and bulk items are monitored from the igloo exterior for airborne agent concentrations on a weekly basis, and igloo interiors are visually inspected semiannually. The weekly inspection log sheet for Area 10 igloos is provided in Attachment 2 (Inspection Plan), Figure 2-1.

18.3 All Area 10 hazardous waste containers are inspected weekly for corrosion, damage, spills, deterioration, and other conditions that could affect container integrity. In addition to examining the physical conditions of containers, all Area 10 DCD hazardous waste container inspections cover:

18.3.1 Facility operating record requirements,
18.3.2 Container labeling requirements,
18.3.3 Storage location requirements, and
18.3.4 Aisle space requirements.

19.0 Buildings 1825, 1835, 4107 and 4536, and Building 4553 Storage Vault

19.1 General Information

19.1.1 Building 4107

19.1.1.1 Wastes stored in Building 4107 waste piles include wastes assigned the Utah Department of Environmental Quality, Division of Solid and Hazardous Waste (UDSHW) waste code F999 (residue from the treatment or testing of chemical warfare agents). In addition, other waste codes may be applied to items stored in the waste piles. All items slated to be managed in waste piles in Building 4107 that may have been contaminated with chemical agent(s) will undergo air monitoring prior to relocation to Building 4107 must not exceed 0.2 STEL/CCL. The waste piles are currently composed exclusively of metal or cement-filled doors that were removed from chemical munition storage igloos. Other inorganic solid wastes may be stored in Building 4107 waste piles as necessary to support DCD operations.

19.2 Building 4536

19.2.1 Building 4536 is used to store hazardous waste with no free liquids, such as empty warheads, empty rocket motors, ton container valves and plugs, M441 shipping/firing tubes, and unused decontamination chemicals (powdered sodium hydroxide, and sodium and calcium carbonate).

19.2.2 Types of wastes stored in Building 4536 are:

19.2.2.1	Metal munition components and casings that have been emptied of their contents (i.e., chemical agent, explosive, and propellant charge);
19.2.2.2	Discarded valves and plugs from ton containers;
19.2.2.3	Spent activated charcoal, either in granular form, or packaged in the manufacturer's filter canisters used for the filtration of gases only;
19.2.2.4	Discarded dry granular/powder decontamination chemicals;
19.2.2.5	Discarded process equipment fabricated from metal, fiberglass, or plastic;
19.2.2.6	Solid debris;
19.2.2.7	Unused chemical warfare detector kits that contain chemically treated wipes and sample tubes, but do not contain any chemical agents (i.e. Identification kits);
19.2.2.8	Solid waste that was once used to package chemical agent munitions made of wood, metal, or plastic (i.e. dunnage); and
19.2.2.9	Glassware, rubber tubing, or paper that contains no liquids.
19.2.2.10	Other wastes, agent-related, or non-agent-related, may be stored in Building 4536 as needed to support mission activities.

19.3 Building 4553 Storage Vault

19.3.1 Building 4553 vault hazardous waste management unit (HWMU) is not currently in use, but has stored hazardous waste in the past and may do so again if necessary.

19.4.1 Buildings 1825 and 1835

19.4.2 Buildings 1825 and 1835 will store wastes with and without free-liquids that consist of agent-related and non-agent-related hazardous waste in containers. Buildings 1825 and 1835 utilize a storage base design for secondary containment that may be augmented by the use of drip pans for storage of containers with free-liquids.

20.0 Emergency Equipment

20.1 Emergency equipment available for use in Area 10 is listed in Attachment 4 (Hazardous Waste Contingency), Table 4-3, "Area 10 Emergency Equipment and Supplies." Area 10 Emergency Equipment consists of decontamination trucks, aid trucks, communication systems, personnel safety equipment, and hand decontamination tools. Equipment stored in other areas is also available for use in emergencies.

21.0 Operating Requirements

21.1 Hazardous waste storage requires many different management practices to ensure safe operations and protection of the environment. DCD SOPs describe procedures for packaging agent-related waste, and the DCD HWMP describes procedures for managing all hazardous wastes, labeling containers, and performing waste inventories. Other management practices related to waste chemical munition storage and handling are provided in the current DDESB storage standards. Containerized hazardous wastes are managed according to R315-8-9.

22.0 Preventive Procedures, Structures, and Equipment [R315-3-2.5(b)(8)]

22.1 Loading and Unloading [R315-3-2.5(b)(8)(i)]

22.1.1 Hazards associated with handling, loading, and unloading operations are minimized through the implementation of DCD SOPs. Hazards are also minimized by personnel receiving the proper training as required by Army regulations. Hazardous waste containers are inspected prior to movement to make sure they are properly closed and tightly sealed. Containers are transported on pallets and loaded and unloaded with a forklift. One or more spotters are used when hazardous waste is moved at any DCD hazardous waste management unit. Ramps facilitate movement of MHE in and out of storage units.

22.2 Runoff [R315-3-2.5(b)(8)(ii)]

22.2.1 Building 4107 has a shell and a concrete base that is elevated approximately 2 feet above exterior grade to prevent run-on. The structure of Building 4107 completely encloses the waste piles, providing protection from precipitation so that neither run-off nor leachate is generated.

22.2.2 The Building 4553 vault is completely enclosed within the northwest corner of Building 4553. The vault floor is elevated above exterior grade. If hazardous waste containers are stored in the vault, containers storing wastes without free liquids will be placed on pallets. Containers storing wastes with free liquids will be placed on drip pans or stored with other appropriate secondary containment. The structure of Building 4553 completely encloses the vault storage area, providing protection from precipitation or run-on.

22.2.3 Building 4536 is fully enclosed and provides some degree of weather protection, although small amounts of precipitation may enter the structure. All containers are placed on pallets that will prevent contact with any rainwater that may accumulate on the floor.

22.2.4 Buildings 1825 and 1835 has a shell and a concrete base that is elevated approximately 2 feet above exterior grade to prevent run-on.

22.3 Protection of Water Supplies [R315-3-2.5(b)(8)(iii)]

22.3.1 Contamination of water supplies is prevented at DCD by minimizing the risk of discharge of hazardous waste. This is accomplished by proper inspection and maintenance of hazardous waste containers, including mitigation of leaking chemical munitions, prompt cleanup of any spills, and proper construction and maintenance of storage structures. Personnel are properly trained and equipped to handle hazardous wastes in both normal and emergency situations.

23.0 Mitigation of Equipment and Power Failures [R315-3-2.5(b)(8)(iv)]

23.1 Emergency backup generators will provide power for surveillance systems in the event of a power outage. DCD has numerous emergency portable generators to provide backup for any operations requiring emergency power. Permitted storage igloos, Buildings 1825, 1835, 4536, 4107, and 90-day storage areas do not require power. Building 4553 is supplied with electrical power, but electrical power is not essential to carry out any waste storage operations at the Northwest Ventilated Vault. The emergency operations center (EOC) has backup emergency generators to operate computers, sirens, and communications equipment in the event of a simultaneous accident/incident and power outage.

24.0 Personal Protective Equipment [R315-3-2.5(b)(8)(v)]

24.1 Various levels of PPE are worn to protect workers from chemical exposure at DCD. DA PAM 385-6, Toxic Chemical Agent Safety Standards, and AR 385-61, The Army Chemical Agent Safety Program, all specify the proper level of PPE to be worn during different operations. Requirements in the listed references have also been incorporated into local SOPs. Stocks of PPE appropriate for all hazardous materials managed at DCD are maintained onsite per the specifications of the aforementioned Army regulations and procedures. Note that these levels maybe different from the OSHA and the NIOSH levels specified in 29 CFR § 1910.120(g)(5). The PPE requirements of DA PAM 385-61 may be modified if a particular operation requires a level of protection other than the one specified.

24.2 The potential for exposure of personnel to any hazardous materials during operations is minimized through monitoring and decontamination of PPE and other equipment before, during, and after use in an area known to be contaminated or potentially contaminated. DCD SOPs or health and safety plans are used to prepare PPE for either reuse or storage for eventual disposal.

25.0 Prevention of Reaction of Ignitable, Reactive, or Incompatible Waste [R315-3-2.5(b)(9), R315-8-2.8]

25.1 All wastes stored at DCD that are listed as ignitable or reactive are protected from sources of ignition or reaction (e.g. open flames, smoking, welding, radiant heat, or heat from friction, sparks, spontaneous ignition, etc.). Fusible links will close igloo ventilation dampers in the event of high temperatures, thereby minimizing the danger from fire. As described in Attachment 1 (Waste Analysis Plan), ignitable or reactive wastes at DCD include spent high efficiency particulate air filters, paint residues, and degreasing solvents. All hazardous wastes, not just the ignitable or reactive wastes, are protected from ignition sources. Some of the waste is potentially reactive, but the storage structures and procedures prevent reactions between the wastes.

25.2 To prevent accidental ignition or reaction caused by a lightning strike, the permitted storage igloos are protected with a lightning protection system. The air terminal (lightning rod) on the rear vent stack is placed at least one foot higher than the top of the vent. Grounding rods are also attached to the igloos.

25.3 Smoking and spark-producing devices are not allowed in units storing agent-related waste. Automatic lighters are installed in permitted smoking areas. No smoking signs are posted at the entrance to area 10 and at all other permitted storage areas.. The Fire Department must issue hot work permits for all operations that involve spark- or flame-producing operations.

25.4 A list of ignitable (D001) and reactive (D003) wastes stored in permitted storage areas is provided in Appendix 1-1, Table 1-1-1, RCRA Hazardous Waste Designation and Rationale. Precautions are taken with regard to storage to ensure that ignitable and reactive wastes are not exposed to ignition sources or other conditions that could initiate a reaction. Containers storing incompatible wastes at DCD are segregated, and incompatible wastes are not mixed. No Smoking signs are posted at all permitted units. Workers are trained annually in proper handling and storage of hazardous waste. Training for DCD workers provides instruction for proper handling and protection from sources that could ignite or cause a reaction with munitions. The training for workers also provides instruction on the proper handling of munitions and related waste. General safety requirements in local SOPs, reviewed with chemical workers, provide instructions for properly handling munitions.

26.0 Inspection and Maintenance [R315-3-2.5(b)(5), R315-8-2.6(b), R315-8-5.3; 40 CFR § 264.73(b)(5)]

26.1 Frequency of facility inspections at DCD are based on the rate of deterioration of the equipment and the probability of an environmental or human health incident if the deterioration, malfunction, or any operator error goes undetected between inspections.

26.2 All permitted DCD hazardous waste management units storing non-agent waste or waste exhibiting contamination less than 0.2 STEL/CCL for chemical agent for solid waste, and less than the Safe Drinking Water Standard for liquid waste are inspected weekly. Containers are inspected weekly to meet the hazardous waste loading/unloading areas inspection requirements of R315-8-9.5. Spill equipment and other contingency equipment are inspected weekly. Hazardous waste loading and unloading areas are inspected daily when in use. Refer to Attachment 2 (Inspection Plan) for facility inspection schedules. Igloo exteriors are inspected weekly for integrity of security features, proper secondary containment, building integrity, and absence of spills. The interiors of all igloos storing waste munitions and bulk items are monitored from the igloo exterior for airborne agent concentrations on a weekly basis, and igloo interiors are visually inspected semiannually. Lightning protection systems are inspected semiannually and tested annually. The weekly inspection log sheet for Area 10 igloos is provided in Attachment 2 (Inspection Plan), Figure 2-1.

26.3 All Area 10 hazardous waste containers are inspected weekly for corrosion, damage, spills, deterioration, and other conditions that could affect container integrity. In addition to examining the physical conditions of containers, all Area 10 DCD hazardous waste container inspections cover:

26.3.1 Facility operating record requirements,
26.3.2 Container labeling requirements,
26.3.3 Storage location requirements, and
26.3.4 Aisle space requirements.

27.0 Open Detonation / Open Burning Conex

27.1 General Information

27.1.1 The OB/OD Conex container is located in the OB/OD area of DCD. The purpose of the OB/OD Conex is to store containers of conventional munitions that have been designated as hazardous waste.

27.2 Emergency Equipment

27.2.1 Because the OB/OD Conex has not been used for several years, no emergency equipment beyond a spill kit is stored at the OB/OD Conex. Emergency equipment will be brought to the area as appropriate if OB/OD activities are resumed.

27.3 Operating Requirements

27.3.1 As discussed above, any needed emergency equipment will be brought to the area to support OB/OD activities.

27.3.2 A fire hydrant is located about 4,800 feet from the OB/OD Conex. Small fires will be fought with fire extinguishers carried on all vehicles.Fire extinguisher at the site.

27.4 Preventive Procedures, Structures, and Equipment [R315-3-2.5(b)(8)]

27.5 Loading and Unloading [R315-3-2.5(b)(8)(i)]

27.5.1 Hazards associated with handling, loading, and unloading operations are minimized through the implementation of local SOPs. Hazards are also minimized by personnel receiving the proper training as required by Army regulations. Hazardous waste containers are inspected prior to movement to make sure they are properly closed and tightly sealed. Containers are transported on pallets and loaded and unloaded with a forklift. One or more spotters are used when hazardous waste is moved at any DCD hazardous waste management unit. Ramps facilitate movement of MHE in and out of storage units.

27.6 Runoff [R315-3-2.5(b)(8)(ii)]

27.6.1 The OB/OD Conex storage building is mounted on rollers, positioning a stored container about 4 inches above exterior grade. An earthen berm surrounding the OB/OD Conex provides further protection from run-on and controls any runoff.

27.7 Protection of Water Supplies [R315-3-2.5(b)(8)(iii)]

27.7.1 Contamination of water supplies is prevented at DCD by minimizing the risk of discharge of hazardous waste. This is accomplished by proper inspection and maintenance of hazardous waste containers, including mitigation of leaking chemical munitions, prompt cleanup of any spills, and proper construction and maintenance of storage structures. Personnel are properly trained and equipped to handle hazardous wastes in both normal and emergency situations.

27.8 Mitigation of Equipment and Power Failures [R315-3-2.5(b)(8)(iv)]

27.8.1 Any activities at the OB/OD Conex requiring power will be supported by portable equipment. No power is required for the building to remain in a safe standby status.

27.9 Personal Protective Equipment [R315-3-2.5(b)(8)(v)]

27.9.1 Personal protective equipment will be supplied to personnel working at the OB/OD Conex as appropriate to accomplish assigned tasks in a safe manner.

27.10 Prevention of Reaction of Ignitable, Reactive, or Incompatible Waste [R315-3-2.5(b)(9), R315-8-2.8]

27.10.1 All wastes stored at DCD that are listed as ignitable or reactive are protected from sources of ignition or reaction (e.g. open flames, smoking, welding, radiant heat, or heat from friction, sparks, spontaneous ignition, etc.). Fusible links will close igloo ventilation dampers in the event of high temperatures, thereby minimizing the danger from fire. As described in Attachment 1, ignitable or reactive wastes at DCD include spent high efficiency particulate air filters, paint residues, and degreasing solvents. All hazardous wastes, not just the ignitable or reactive wastes, are protected from ignition sources. Ignitable waste is not stored in Area 10 or Area 2 permitted storage facilities. Some of the waste is potentially reactive, but the storage structures and procedures prevent reactions between the wastes.

27.10.2 To prevent accidental ignition or reaction caused by a lightning strike, the permitted storage igloos are protected with a lightning protection system. The air terminal (lightning rod) on the rear vent stack is placed at least one foot higher than the top of the vent. Grounding rods are also attached to the igloos.

27.10.3 Smoking and spark-producing devices are not allowed in units storing agent-related waste. Automatic lighters are installed in permitted smoking areas. No smoking signs are posted in all permitted storage areas, 90-day storage areas, and SASs. The Fire Department must issue hot work permits for all operations that involve spark- or flame-producing operations.

27.10.4 A list of ignitable (D001) and reactive (D003) wastes stored in permitted storage areas is provided in Appendix 1-1, Table 1-1-1, RCRA Hazardous Waste Designation and Rationale. Precautions are taken with regard to storage to ensure that ignitable and reactive wastes are not exposed to ignition sources or other conditions that could initiate a reaction. Containers storing incompatible wastes at DCD are segregated, and incompatible wastes are not mixed. No Smoking signs are posted at the enterance of area 10 and all other permitted units. Workers are trained annually in proper handling and storage of hazardous waste. Training for DCD workers provides instruction for proper handling and protection from sources that could ignite or cause a reaction with munitions. The training for workers also provides instruction on the proper handling of munitions and related waste. General safety requirements in local SOPs, reviewed with chemical workers, provide instructions for properly handling munitions.

27.11 Inspection and Maintenance [R315-3-2.5(b)(5), R315-8-2.6(b), R315-8-5.3; 40 CFR § 264.73(b)(5)]

27.11.1 Frequency of facility inspections at DCD are based on the rate of deterioration of the equipment and the probability of an environmental or human health incident if the deterioration, malfunction, or any operator error goes undetected between inspections.

27.11.2 All permitted DCD hazardous waste management units storing non-agent waste or waste exhibiting contamination less than 0.2 STEL/CCL for chemical agent for solid waste, and less than the Safe Drinking Water Standard for liquid waste are inspected weekly. Containers are inspected weekly to meet the hazardous waste loading/unloading areas inspection requirements of

R315-8-9.5. Spill equipment and other contingency equipment are inspected weekly. Hazardous waste loading and unloading areas are inspected daily when in use. Refer to Attachment 2 for facility inspection schedules. Igloo exteriors are inspected weekly for integrity of security features, proper secondary containment, building integrity, and absence of spills. The interiors of all igloos storing waste munitions and bulk items are monitored from the igloo exterior for airborne agent concentrations on a weekly basis, and igloo interiors are visually inspected semiannually. Lightning protection systems are inspected semiannually and tested annually. The weekly inspection log sheet for Area 10 igloos is provided in Attachment 2, Figure 2-1.

27.11.3 All Area 10 hazardous waste containers are inspected weekly for corrosion, damage, spills, deterioration, and other conditions that could affect container integrity. In addition to examining the physical conditions of containers, all Area 10 DCD hazardous waste container inspections cover:

27.11.3.1 Facility operating record requirements,
27.11.3.2 Container labeling requirements,
27.11.3.3 Storage location requirements, and
27.11.3.4 Aisle space requirements.